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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,158	03/27/2001	Andrew L. Norrell	PA1690	2663

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EXAMINER

SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2644

20

DATE MAILED: 05/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/819,158

Applicant(s)

NORRELL ET AL.

Examiner

Daniel Swerdlow

Art Unit

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 20 April 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☒ A Notice of Appeal was filed on 20 April 2004. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See attached.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: arguments are not persuasive. See attached.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: _____.

Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☒ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). 19.
10. ☒ Other: The response is non-compliant. See attached.

DETAILED ACTION

1. The reply filed on 20 April 2004 is noncompliant because of the following omission(s) or matter(s): Proposed amendments to Claims 11, 16, 18 and 23 are printed in gray ink. 37 CFR 1.52 requires:

All papers, other than drawings, that are to become a part of the permanent United States Patent and Trademark Office records in the file of a patent application or reexamination proceeding must be on sheets of paper that are the same size, and:

(iv) Plainly and legibly written either by a typewriter or machine printer in permanent dark ink or its equivalent; and

(v) Presented in a form having sufficient clarity and contrast between the paper and the writing thereon to permit the direct reproduction of readily legible copies in any number by use of photographic, electrostatic, photo-offset, and microfilming processes and electronic capture by use of digital imaging and optical character recognition.

2. Because of this noncompliance, the amendment is not entered.
3. Further, the proposed amendments raise new issues that would require further consideration and/or search.
4. The proposed amendments to Claims 16 and 23 change the capacitive elements and the interwinding capacitance from a series connection to a parallel connection. This is a significant change in the claim that requires further search and consideration.
5. The proposed amendment to Claim 18 changes the loop configuration from a two-segment (i.e., one junction) configuration with amplification, inductive coupling and capacitive coupling between the two segments to a three-segment (i.e., two section) configuration with inductive coupling and capacitive coupling at one junction and amplification at the other junction.

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6. In order to advance prosecution to the maximum degree possible, examiner addresses applicant's arguments in this advisory action in the same manner as if the response had been properly submitted.

Response to Arguments

7. Applicant's arguments submitted 20 April 2004 have been fully considered but they are not persuasive.

8. Regarding Claim 1, examiner has shown that Quarles teaches a load coil for a telephone line comprising two windings and two capacitors arranged in configuration as claimed in Claim 1. Examiner has further shown that one skilled in the art, wishing to practice the invention of Quarles would have arrived at capacitance values for the diagonally disposed capacitors of between 17nF and 34nF. As applicant correctly states, Quarles states these values as a function of the capacitance of a section of the telephone line between two adjacent load coils. As such, one skilled in the art would have sought to determine the capacitance of a section of the telephone line between two adjacent load coils in order to practice the invention. Reference books are used by those skilled the art to determine such physical properties and examiner has cited such a reference book as showing that a typical gauge of telephone wire (24 AWG) over a standard load coil spacing (6000 feet) yields a capacitance value of 17nF to 34nF. It can be seen from the table on page 110 of Reference Data for Radio Engineers, which was provided to applicant with a prior Office action that 1.35 miles (i.e., 6000 feet) is the most common standard load coil spacing and not an arbitrary figure chosen in hindsight. Further, while the table on page 111 shows that different wire gauges yield different capacitances, even the lowest

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capacitance per mile (.064 $\mu\text{F}/\text{mi}$ for 16 AWG wire) yields capacitance values of 14.5 nF to 29nF. Having established the capacitance values one skilled in the art would have used, obviousness of the claimed invention is shown if these values are at least four times the interwinding capacitance of the load coil. To establish this value, examiner relies on the Drew reference, which reports this value as 1,150 pF (1.15 nF). Therefore even the lowest capacitance value for the telephone line results in the capacitance values of the diagonally disposed capacitors exceeding the interwinding capacitance of the load coil by more than a factor of 12. Further, applicant's provisional application, incorporated by reference in the present application puts load coil interwinding capacitance at 1040 pF (1.04 nF), which results in the capacitance values of the diagonally disposed capacitors exceeding the interwinding capacitance of the load coil by a factor of 14. As such, the claimed invention is shown to be obvious since one skilled in the art seeking to practice the invention of Quarles would arrive at the claimed invention. In applicant's recitation at the end of Claim 1, "wherein the first capacitive element and the second capacitive element each have capacitance values that are at least four times the interwinding capacitance value between the first winding and the second winding to permit passage of DSL signals across the load coil", the ultimate portion: "to permit passage of DSL signals across the load coil" is clearly intended use since the wording indicates that this permission stems from the ratio of capacitance element capacitance to interwinding capacitance being at least 4 and the prior art makes obvious a ratio of 12 or more.

9. Applicant argues, for example at the bottom of page 14 of the response, that the prior art "does not disclose or suggest that the capacitance value of the condensers 8 are selected based on any capacitance associated with the inductance coils 7". The method of selection of the

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capacitance values is not an element of Claim 1. Claim 1 is a claim drawn to a load coil, not a method for selecting component values.

10. Applicant argues that the interwinding of the load coil may be different by referring to three references regarding transformers. The first reference is a Power Integration spec sheet for a battery charger that makes no mention of interwinding capacitance. The second reference is a listing of Lundahl transformers for vacuum tube amplifiers that also makes no mention of interwinding capacitance. The third reference is a 27 page abstract from a textbook by Grossner consisting of parts of Chapters 9 and 10. Chapter 10 is concerned specifically with pulse transformers and Chapter 9 is concerned with mathematical modeling of a transformer's associated capacitances, but gives no practical information regarding the interwinding capacitances of telephone load coils.

11. Applicant argues that examiner has used inappropriate hindsight in arriving at capacitance values. As shown above, examiner has used standard values for telephone line capacitance and load coil spacing taken from an authoritative reference.

12. Applicant alleges that Drew teaches away from Claim 1. Drew is relied upon only for the value of the interwinding capacitance of a load coil. Further, while Drew discloses a slightly different structure, nowhere does Drew suggest the structure of Claim 1 is undesirable.

13. Applicant alleges that the load coil in Drew and the load coil in Quarles "may be quite a bit different". The load coil interwinding capacitance of 1150 pf in Drew is characterized as "typical" and, as shown above, is in agreement with applicant's admission.

14. Applicant refers to "three factors" that affect novelty in the electrical and electronic arts. In this case the structural relationship of components relative to one another in Quarles are

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identical to that of Claim 1. Further, as examiner has shown, the component values taught by Quarles in view of standard reference sources are within the range claimed as evaluated in light of available reference and applicant's own admission. In addition, the technical application (i.e., a load coil on a telephone line) of Quarles is the same as Claim 1.

15. As shown above, applicant's recitation in Claim 1: "to permit passage of DSL signals across the load coil" is clearly intended use since the wording indicates that this permission stems from the ratio of capacitance element capacitance to interwinding capacitance being at least 4. As such, the citation of Ex parte Masham is applicable.

16. Applicant argues that the prior art fails to teach a range within, overlapping, or touching the claimed range with sufficient specificity. As shown above, the prior art makes obvious a range of capacitance values well within the claimed range.

17. Applicant argues that the structure implied by process steps should be considered when assessing the patentability of product-by-process claims. In this case, examiner has shown the obviousness in view of prior art of the capacitance values being at least four times the interwinding capacitance value. That the prior art arrives at this structure without going through the process that applicant imputes to the claim (i.e., determining an interwinding capacitance and multiplying by at least four), does not patentably distinguish from prior art.

18. Applicant's arguments regarding Claims 2, 3 and 24 are based solely on their dependence from Claim 1 and, as such, are not persuasive for reasons stated above.

19. Regarding Claim 22, applicant makes the same arguments that were made in reference to the capacitance values of Claim 1. These arguments are unpersuasive for reasons stated above.

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20. Applicant further argues that the cited prior fails to teach “capacitive elements configured to pass the DSL signals traversing the first and second local loops”. As examiner has shown, the capacitive elements in Quarles are configured in accordance with Claim 22 (i.e., a first capacitor coupling the first wire to the fourth wire and a second capacitor coupling the second wire to the third wire) and have values in accordance with Claim 22 (i.e., at least four times an interwinding capacitance value). As such, all limitations of the claim are met.

21. Regarding Claims 16 and 23, applicant’s arguments relate to the unentered proposed amendment. As such, the arguments are not directed to the pending claims and no response is needed.

22. On page 28, applicant states that Claim 24 depends from Claim 23. This is incorrect. Claim 24 depends from Claim 1.

23. Regarding Claim 4, applicant’s arguments are based on the assumption that the cited prior art fails to make obvious Claim 1. As shown above, the cited prior art makes obvious Claim 1.

24. Regarding Claims 11, 13 and 15 through 17, examiner has explained in a prior Office action why a recitation of the form “capacitive elements that have capacitance values relative to an interwinding capacitance value of the coupled inductor” to not patentably distinguish the claims from the prior art.

25. Regarding Claims 18 through 21, applicant’s arguments relate to the unentered proposed amendment. As such, the arguments are not directed to the pending claims and no response is needed.

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Conclusion

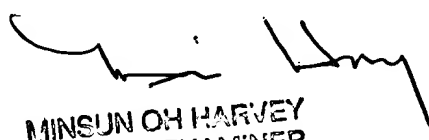
26. Applicant has submitted a non-compliant response after final rejection with significant claim amendments, claim cancellations and amendments directed to matters of form, as well as arguments in request of reconsideration of rejections and objections. Because of the noncompliance of the response and the significant claim amendments that would require further search and consideration, the amendment will not be entered. In the interest of advancing prosecution, response to arguments has been made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 703-305-4088. The examiner can normally be reached on Monday through Friday between 8:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forrester Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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